**FoPL Stage 2 Research**

Measuring the impact of FoPL labelling on consumer food purchase choices

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***Report submitted to***

**Department of Health**

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# EXECUTIVE SUMMARY

Research was commissioned by the Department of Health (the department) to examine the potential impact of a front-of-pack labelling (FoPL) system in a simulated shopping environment, with FoPL exposure targeted at a representative sample of Australian grocery shoppers. The research sought to build on insights gained in preceding Stage 1 research where an initial indication of the general positive impact of FoPL on food purchase choices was suggested. The Stage 2 research summarised in this report imposed an additional layer of ‘market realism’ to the department’s understanding through examining *the scale* of potential behaviour change, in the context of *actual purchase decisions*.

Incorporating the department’s completed work on a FoPL star-system algorithm (capable of generating FoPL labels for any consumer food product), and with 108 participating products included across six categories, a nationally representative sample of n=4,171 grocery buyers was accessed via an online survey:

* All grocery buyers were presented with an onscreen mocked up shelf display and asked to indicate how many of each product (within a given food category) they would buy in a typical month. The composition of the shopping basket here represented the *a priori* monthly ‘shopping basket’, and the anchor point for the analysis.
* The sample was randomly split into two:
	+ Half the sample repeating the online shopping task (with the same categories and products), with full FoPL labels visible on all products.
	+ With the other half repeating their online shopping task (with the same categories and products), only this time with partial FoPL labels (Stars + Energy badge) visible on all products.
* The sample was then presented with the opportunity to change the composition of their original ‘shopping basket’, post FoPL, with associated volume changes then representing the analysis focal point for FoPL impact.

## Key findings

**The findings suggested that FoPL will contribute to healthy food purchase choices**. At individual category levels, the most positive changes to purchase volumes tended to occur at the highest star ratings presented to grocery buyers. For example, exposure to a 4-5 star rating for a Lunchbox filler product resulted in a 26% increase in purchase volume.

### Volume changes

The most prominent themes to emerge were when products were grouped according to their star level. The findings indicated that a ‘FoPL threshold’ was observed at 2½ to 3 stars – reactions above and below this mid range provoked some marked changes in consumption intention following exposure. For example, while star ratings above this range resulted in increasing intentions (up to the highest two categories of 4½ to 5 stars – yielding approximately 15% increases in volumes), ratings below this mid range saw decreasing intention of almost similar magnitude. On balance, for the 108 products in the study, we saw FoPL increasing the size of the market under consideration, with an overall 4.2% increase in volume.

### Label type

The study confirmed that the two FoPL label types (‘full FoPL label’ versus ‘Stars + Energy’) tended to work similarly, across star rating levels. The evidence suggests that a more expanded FoPL description did not influence grocery buyer intention to a greater or lesser degree. Thus, **the abbreviated Stars + Energy variant option** appeared to be a more efficient approach to influencing healthy food choice.

### Demographic differences

Finally, FoPL exposure did reveal that a number of demographic sub-groups were more ‘FoPL- sensitive’. In particular, mature families (oldest child over 15), young singles/couples, the under 25 *and* 40 plus age groups exhibited that they were most elastic at the two ends of the FoPL star scale. Interestingly, those aged 25-39 and middle family (oldest child 6-15) grocery buyers exhibited the lowest FoPL sensitivity. Thus, **we recommend that a segmented communications strategy be employed as FoPL is rolled out, that is cognisant of these lifestage nuances**. The latter finding suggests that busy people with growing children may be more ‘set in their grocery ways’ – suggesting a particular hurdle for FoPL to overcome in driving healthier food purchases.

# RESEARCH CONTEXT

## Background to the research

The department provides secretariat services for the FoPL Project. This project is the result of the agreement by the Legislative and Governance Forum on Food Regulation to support recommendation 50 of Labelling Logic: Review of Food Labelling Law and Policy (2011), namely that an interpretive front-of-pack labelling system should be developed. The development and introduction of this system stems from an agreement by the Legislative and Governance Forum on Food Regulation to support regulation 50 of the Labelling Logic: Review of Food Labelling Law and Policy (2011). The FoPL scheme is designed to guide consumer choice towards healthier food options.

Previous research by Hall & Partners | Open Mind (commissioned in November 2012) sought to:

* Provide a background understanding of consumers’ knowledge, understanding, attitudes, intentions and behaviour regarding food labelling and purchase choice
* Diagnose consumer ability to accurately use and understand proposed design elements (both interpretive (rating) and nutrient (information / education)
* Determine preferred design concepts / combination for both interpretive (rating) and nutrient (information / education) elements of FoPL
* Understand the impact of FoPL on broader choice and purchase behaviour.

Amongst the outputs of this first stage of research were some specific recommendations around label design and content – summarised in the image below.

***Image of recommended FoPL design from stage 1 of the research (note that although many of the research recommendations were adopted, the image below does not represent the final design that was selected by the working group)***



Using the design above, Stage 1 of the research quantitatively explored the potential impact of FoPL on food choices, and this impact was determined based on self-claimed information – in other words, consumers (i.e. respondents within the survey) were asked to rate the extent to which they felt that the new FoPL label would influence their food purchase choices. This Stage 1 approach provided a clear initial indication on the general positive impact that FoPL will have on food purchase choices. The Stage 2 research summarised in this report sought to impose an additional layer of ‘market realism’ to the department’s understanding through examining *the scale* of potential behaviour change, in the context of *actual purchase decisions*.

## Research approach and project aims

Short of an “in-market” test, a reliable and more efficient means for determining the impact of a measure such as FoPL on consumer behaviour is through a simulated decision task, which requires consumers to imagine that they are shopping, and make food purchase decisions based on a range of choices that are presented to them. Accordingly, the research design consisted of three main components:

* A pre-task: a simulated shopping basket task in which respondents were asked to choose from a selection of real products the number of each that they would buy in a typical month
* Brief introduction to FoPL: a short screen describing the FoPL label and that a similar label with appropriate metrics would be shown on product in the subsequent task
* A post-task: a repeat of the simulated shopping basket task, only now with each product having a FoPL label attached to it showing real-world FoPL metrics, tailored to each product based on the algorithm developed by the department.

The broad aim was to compare pre- and post-task purchase rates to determine the impact of the introduction of FoPL.

The research design consisted of the following specific elements:

* A representative, 15 minute online survey of n=4,000+ main grocery buyers within the household.
* All grocery buyers were presented with an onscreen mocked up shelf display and asked to indicate how many of each product (within a given food category) they would buy in a typical month. The composition of the shopping basket here represented the monthly ‘shopping basket’, and the anchor point for the analysis.
* The sample was randomly split into two:
	+ Half the sample repeating the online shopping task (with the same categories and products), with full FoPL labels visible on all products.
	+ With the other half repeating their online shopping task (with the same categories and products), only this time with partial FoPL labels (stars + energy badge) visible on all products.
* The sample was then presented with the opportunity to change the composition of their original ‘shopping basket’, after introduction of FoPL, with associated volume changes then representing the analysis focal point for FoPL impact.
* Categories (with 12-23 individual products within) were:
	+ Juices/drinks or milks (milks to include plain, flavoured, milk substitutes such as soy)
	+ Breakfast cereals
	+ Yogurts or dairy desserts
	+ Lunchbox fillers (including fruit salads, snack bars, packaged dips)
	+ Convenience or pre-prepared meals (includes frozen or chilled meals, prepared dietary meals).
	+ Salty Snacks.
* All products included in the survey were real world products (by permission of industry brand owners). Furthermore, in selecting the products within each category, care was taken to ensure a range of different numbers of stars within each category.

## Research design and sample overview

Quantitative fieldwork accessed a nationally representative sample of Australians aged 16 and over via the i-Link Consumer Panel, which was screened for both grocery buying and sole/joint influence on foods purchased for the household. An overall sample size n=4,171 was achieved for the FoPL analysis, yielding a 95% confidence interval of up to ± 1.52%. (Corrective statistical weighting was not necessary due to starting representative sampling and screening approach.)

Sample sizes and breakdowns achieved at overall and category levels for the sample as a whole and by key demographic sub-groups are summarised below (additional sample characteristics are provided at Appendix 1):

Table 1: Key sample characteristics

|  | **Total****(n=4,171)****%** | **Beverages****(n=4,040)****%** | **Breakfast Cereals****(n=3,137)****%** | **Yoghurt & dairy****(n=3,135)****%** | **Lunchbox fillers****(n=1,763)****%** | **Convenience meals****(n=2,214)****%** | **Salted snacks****(n=2,867)****%** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ***Gender***MaleFemale | **37%****63%** | 37%63% | 38%62% | 35%65% | 32%68% | 38%62% | 36%64% |
| ***Age group***16-1819-2425-3940-5455-6465-7475+ | **4%****11%****26%****27%****16%****11%****5%** | 4%11%26%27%17%11%5% | 4%11%27%26%16%10%5% | 5%11%28%26%16%10%5% | 7%14%38%28%8%4%2% | 6%13%28%27%13%9%4% | 5%12%29%29%14%8%3% |
| ***Special dietary needs***Yes | **24%** | 24% | 23% | 22% | 22% | 22% | 24% |
| ***Location***NSWVictoriaQueenslandWestern AustraliaSouth AustraliaTasmaniaNorthern TerritoryACT | **30%****27%****21%****8%****10%****3%****0.3%****1%** | 30%27%21%9%10%3%0.3%2% | 30%27%20%8%10%3%0.3%1% | 30%26%20%8%10%3%0.3%2% | 31%28%18%9%10%3%0.3%1% | 31%27%20%8%10%3%0.2%1% | 31%27%20%8%10%3%0.3%1% |
| ***Lifestage***Young single or couple (no children)Young family (oldest child < 6 years)Middle family (oldest child 6-15)Mature family (oldest child > 15)Mature single or coupleOther Don’t know/ prefer not to say | **15%****8%****12%****19%****38%****5%****2%** | 15%8%12%19%39%5%2% | 14%9%14%19%36%5%2% | 15%10%13%20%36%5%2% | 17%13%23%22%19%4%2% | 16%9%14%20%34%5%2% | 15%9%15%21%33%5%2% |

In all, the products with attached FoPL ratings examined had the following characteristics:

* Beverages (15 products), Breakfast Cereals (23 products), Yoghurt and dairy desserts (12 products), Lunchbox fillers (17 products), Convenience meals (23 products) and Salty snacks (18 products).
* The products were distributed across the following star levels:½ star (4), 1 star (2), 1½ star (8), 2 star (8), 2½ star (11), 3 star (10), 3½ star (28), 4 star (20), 4½ star (7) and 5 star (10)

The field dates for the survey were 19 February to 24 February 2014, with an overall response rate of 20% (representing the n=4,171 sample achieved). The survey instrument used is included in Appendix 2. Analysis of data sets was through SPSS and Q statistical software. Where appropriate, statistically significant differences were examined (at the =0.05 significance level).

# RESEARCH FINDINGS

## Analysis approach

The analysis sought to ascertain the level of influence, if any, FoPL exposure has on simulated consumption patterns indicated by the grocery buyer sample, focusing on the volume-based impact on the initially selected basket of supermarket items. All analyses were accordingly anchored to:

* **Relevance/usage:** Current category usage (Beverages, Breakfast cereals, Yoghurt & dairy desserts, Lunchbox fillers, Convenience meals and Salted snacks)
* **The current volumes** indicated at Q. C1 for participating products

*C1. Below you can see a range of food products that are available in grocery stores and supermarkets. Please indicate how many of each product you would normally buy over an average month.*

* **Post-FoPL exposure volumes** indicated at Q. F1:

*F1. As before, below you can see a range of food products that are available in grocery stores and supermarkets. Each product now has on its pack a new nutritional label, like the one you saw earlier. To see the label for any given product, just click on the product.*

*Remember to assume that the label is real and the information contained on it is accurate for each product.*

*As you did before, please indicate how many of each product you think you would buy over an average month.*

*Your previous answers are shown as a guide – you can choose to leave these as they are, or to change them.*

An initial review of the data revealed that often distinct differences were emerging at a number of, but not all, FoPL star ratings. Below, we firstly present the results that emerged at a category level. The stronger themes that emerged in aggregated categories at discrete star-rating levels are then focused on in detail. While volume changes are not easily adapted to tests of statistical difference, we convert summary data to a form amenable to such tests, to confirm the volume based themes that emerge. We also examine findings based on type of FoPL label exposure and the demographic/lifestage differences that emerged. We conclude this section by examining actual monthly sales volume data for aggregate groups of products included in the study, and project the potential ‘FoPL impact’ suggested by the findings.

## Purchase volume changes indicated following FoPL exposure

### Category level

Within the six categories, products were grouped according to star ratings, ensuring a minimum of two products were allocated to each category that is depicted in the charts below. This necessitated the grouping of some star rating categories (e.g. Beverages includes a ‘3 & under’ category). Also, each category did not cover the gamut of star ratings – for example, 5 star ratings were absent for both Convenience meals and Salted snacks. The results that emerged, contrasting pre versus post FoPL exposure, are summarised below.

Figure 1: Percentage change in indicated monthly consumption volume following FoPL exposure, by category and rating groups



It can be seen that positive results were indicated within Beverages for each included star rating – up to a 17.5% volume increase for 3½ stars. In remaining categories (where a broader star rating range was present), a more interesting theme emerged. Star ratings above 3 tended to be associated with higher and in some cases *increasing* indicated volumes post exposure (up to 37.1% in the case of Salted snacks rated 3-4), while those below 3 tended to be associated with falls in indicated consumption (up to 15.5% in the case of Lunchbox fillers rated 1½ and under). The themes suggested were confirmed when all products were grouped based on their associated star rating, as shown below.

Figure 2: Percentage change in indicated monthly consumption following FoPL, by star groups



The results suggest a prominent theme – **a 2½ to 3 rating is a threshold for change in consumption intention following FoPL exposure**. Ratings above this *increased* up to the highest two categories (4½ to 5 – 15.2-16.1% volume increase), and ratings below this point *decreased* in double digit terms from 1½ and below (e.g. -14.6% at ‘1’). On balance, the products in the test experienced a 4.2% overall increase in consumption.

While a test for statistical significance is not readily fashioned for volume changes, we applied a means-based test, based on volume averages under each rating, to check the substance of the above themes. The results are summarised below.

Figure 3: Change in mean purchase volume following FoPL, by star rating groups



The means-based review of the above findings confirms the themes that emerged – star ratings of 3½ and above substantially boost consumption intent post FoPL exposure, while ratings of 2 and below yield the opposite. Mid-ratings of 2½ to 3 do not yield significant changes. On these analyses, there is also suggestion of an ‘ascending upside’ as ratings move above 3½, while sub 2½ star declines are constrained at roughly similar levels. Thus, the analysis from the FoPL exposure exercise strongly suggest that consumption patterns will potentially change, and particularly so at the higher-lower ends of the star spectrum.

### Type of FoPL label exposure

Approximately even groups of respondents were exposed to the two FoPL label types (‘full FoPL label’ versus ‘Stars + Energy’). The chart below summarises the resulting changes in indicated consumption, following exposure to the respective label types.

Figure 4: Percentage change in indicated monthly consumption following FoPL, by label type and star rating groups



It can be seen that the label types **tended to perform in unison against most star rating points**. In regard to the key ‘threshold’ star rating points identified previously (3½ plus versus 2 and below), results were very similar. Moderate overall volume increases (3.8% - 4.5%) were experienced in both cases. Thus, the results would strongly suggest that the more economical ‘Stars + Energy’ version will not yield notably different results to the more expanded version.

### Demographic differences

As would be expected, some differences emerged in demographic sub-group reactions to FoPL exposure. Key sub-group findings are summarised in the table below.

Table 1: Percentage change in indicated monthly consumption following FoPL, by demographic group and star rating



The demographic comparison reveals a number of interesting outcomes within key sub-groups:

* Respondents with special dietary needs demonstrated somewhat greater sensitivity at some star rating points (particularly at 1½ stars), and tended to exhibit reactions slightly more pronounced than total sample views.
* Females demonstrated slightly higher sensitivity at both positive and negative ends of the spectrum, though a consistent difference to males was absent.
* Young singles/couples responded most positively to 4½ and 5 star ratings.
* Young families (oldest child under 6 years) tended to be most positive at lower rating points (3 and 3½).
* Mature families (oldest child over 15 years) were the most sensitive at lower star ratings, indicating large decreases at ½ to 1 stars. They also responded most positively at 4½ stars.
* Under 25s *and* those aged 55 plus indicated the most negative reactions to star ratings 2 and below.
* Prime working age respondents aged 40-54 were the most positive when faced with star ratings 3 and above.

Thus, FoPL exposure did reveal a tendency to produce disparate results across demographic sub-groups. As a means comparing variability, the table above also illustrates the range that emerged for each group’s reaction (see bottom row). Groups that revealed notably wide bands of response (relative to the overall range of 30.7 percentage points) were mature families (51.8), the under 25 *and* 40 plus age groups (38.7-39.2) and young singles/couples (39.2). In contrast, those aged 25-39 (26.9) and middle families (22.2) exhibited the highest degree of ‘being set in their ways’, with relatively low FoPL response variation. Nonetheless, a 5 star rating provoked the most positive volume change for both.

### Summary – key findings from the survey of Australian grocery buyers

***Supporting the findings from previous stages of the research, the FoPL system appears to have a real and material impact on healthy food purchasing amongst consumers.***

* The sample of grocery buyers in the Beverages, Breakfast cereals, Yoghurt & dairy desserts, Lunchbox fillers, Convenience meals and Salted snacks categories revealed that FoPL exposure will potentially impact their future shopping choices, particularly at certain star rating levels. Most interestingly, a ‘FoPL threshold’ was observed at 2½ to 3 stars – reactions above and below this mid range provoked some marked changes in consumption intention following exposure. While star ratings above this range resulted in increasing intentions (up to the highest two categories of 4½ to 5 stars), ratings below this mid range saw decreasing intention. On balance, for the 108 products in the study, we saw FoPL increasing the size of the market under consideration, with an overall 4.2% increase in intended consumption.

***Displaying the star system + energy badge has virtually the same impact as the full FoPL label, suggesting that the former should be used as a more space-efficient approach to influencing healthy food purchasing***

* The study confirmed that two FoPL label types (‘full FoPL label’ versus ‘Stars + Energy’) tended to work similarly, across most star rating levels. The evidence suggests that a more expanded FoPL description did not influence shopper intention to a greater or lesser degree.

***The FoPL system had varying levels of influence on different consumer demographics – suggesting that certain consumer groups (e.g. busy families) may require a targeted education campaign to cut through***

* Finally, FoPL exposure did reveal that some demographic sub-groups were more FoPL- sensitive. In particular, mature families (oldest child over 15), young singles/couples, the under 25 and 40 plus age groups exhibited the highest variance in their responses at the high and low end of the star rating levels they were exposed to. Interestingly, those aged 25-39 and middle family exhibited the lowest FoPL sensitivity.

# APPENDIX 1: ADDITIONAL SAMPLE CHARACTERISTICS

|  | **Total****(n=4,171)****%** | **Beverages****(n=4,040)****%** | **Breakfast Cereals****(n=3,137)****%** | **Yoghurt & dairy****(n=3,135)****%** | **Lunchbox fillers****(n=1,763)****%** | **Convenience meals****(n=2,214)****%** | **Salted snacks****(n=2,867)****%** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ***Household income***Up to $20,000$20,001 to $35,000$35,001 to $50,000$50,001 to $75,000$75,001 to $100,000$100,001 to $150,000$150,001 to $200,000More than $200,000Don’t know/prefer not to say | **7%****16%****13%****16%****14%****13%****4%****2%****16%** | 7%16%13%16%14%12%4%2%16% | 6%15%13%16%15%13%4%2%16% | 6%15%12%16%15%13%4%2%16% | 5%11%11%16%18%17%5%2%15% | 7%17%11%17%15%14%4%2%14% | 6%13%12%16%16%14%5%2%15% |
| ***Educational level***Year 9 or belowYear 10 or 11Year 12 or high school equivalentTAFE certificate or diplomaBachelors degreePostgraduate qualificationDon’t know/ prefer not to say | **3%****14%****18%****32%****21%****10%****1%** | 3%15%18%32%21%10%1% | 3%14%18%32%21%10%1% | 3%14%17%32%22%11%1% | 2%13%18%31%24%10%1% | 4%14%18%31%22%10%1% | 3%15%18%32%22%9%1% |
| ***Working situation***Working full time (30+ hours/week)Working part time/casualHome dutiesRetiredStudentNot in the workforceOther | **31%****20%****12%****21%****7%****7%****2%** | 31%21%12%21%7%7%2% | 30%21%13%21%7%6%2% | 31%21%13%19%7%6%2% | 36%24%15%8%10%5%2% | 33%21%12%17%8%6%2% | 34%21%13%16%8%7%2% |
| ***Aboriginal / TSI origin***Yes | **2%** | 1% | 2% | 1% | 2% | 2% | 2% |
| ***LOTE***Yes | **13%** | 13% | 13% | 14% | 15% | 14% | 14% |

# APPENDIX 2: SURVEY INSTRUMENT



![Thanks for taking the survey - it should take around 15 mins to complete, and it is about how you purchase foods.  The survey is being conducted by Hall & Partners | Open Mind.  Your responses will be held in strict confidence in accordance with the Australian Market and Social Research Society.  Within this survey you may see or read some materials which are confidential.  By clicking on the 'Agree' button, you agree not to copy, download, save in any format, discuss or distribute, any images, ideas, concepts or information that you see in this survey.  Please select 'Agree' if you accept this, then 'Continue' to start the survey.  Thanks for taking this survey.  Before we start, we just need to check a few details.  S1. In which age bracket are you?  1. Under 15 [Close] 2. 16-18 3. 19-24 4. 25-39 5. 40-54 6. 55-64 7. 65-74 8. 75 and over  S2. When it comes to purchasing groceries in your household, which of the following statements best describes you?  1. I am the main grocery buyer 2. I am not the main grocery buyer, but I regularly buy groceries 3. I am not the main grocery buyer and I only buy groceries occasionally 4. I don't buy groceries in the household 5. Not sure  CONTINUE IF S2=1 or 2  S3. When you are grocery shopping, what influence do you have on which foods you purchase for your household?  1. I decide solely on which foods I purchase for the household ]()





 









